

Marin Bunea (1881-1971) belongs, not only chronologically, both to the interwar generation, and to those who asserted themselves in the following period. In postwar years, his exhibiting activity was fruitful and the social accents, obvious until then in his painting, became more consistent. Man, who seldom appeared, in land- or cityscapes, more as a pictorial motif and as an expression of deeply felt loneliness, became the dynamic centre of the image. The immobility of the figure and of the other elements of the composition, to which less bright chromatic tones corresponded, were left aside in favour of the vivid dynamism of scenes evoking the country's big construction sites.

The painter was, throughout his evolution, rather, equilibrated, tending toward objectivity and construction. The impressionistic sensorial subjectivity, under whose sign he made his debut, or the ethical subjectivity of expressionism — from which he adopted on one hand, a certain freshness in the elaborate rendering of sensations at the level of affectivity, and on the other hand, the constructive rigour and material consistency of the mass — influenced him without diverting him from the natural ways of his character. The sadness and melancholy of the first period and the optimism of the second never reached extreme forms. In a period when avant-garde movements disputed their priority, Marin Bunea was not seduced by the more or less lasting glory, of either of them. He had a slow evolution on his own path, under the signs of equilibrium and harmony, of a permanent aspiration towards the classical rigour of pictorial expression.

O. BARBU ■

Our photos feature reproductions of some of the painter's works: Self-Portrait (top, left), Bucharest in Winter (centre, left) Child with Toy Horse (bottom, left); Hydrangea (top, centre), Street in Bucharest (top, right); Magda (centre, right), Black Bottle (bottom right); Constantia (below)



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ROMANIAN NEWS



NICOLAE CEAUȘESCU AND ELENA CEAUȘESCU PAID A WORKING VISIT TO CONSTANȚA COUNTY

ANALYSIS OF THE STAGE REACHED IN
THE IMPLEMENTATION OF THE PLAN PROVISIONS AND
THE NATIONAL DEVELOPMENT PROGRAMMES • THE LAUNCH
OF THE BIGGEST SHIP BUILT IN ROMANIA

On Tuesday, July 12, RCP General Secretary Nicolae Ceaușescu, President of Romania, and Elena Ceaușescu, paid a working visit to large economic units in Constanța municipality.

Just like all the areas of the country, in the years of socialist construction and particularly in the period inaugurated by the Ninth RCP Congress (1965), Constanța county has undergone renewing changes in all domains of economic and social life. The country's industry, represented by leading units of the national economy, is quickly characterized by high dynamics and efficiency. An important place is held by the sea transport and the shipbuilding industry, sectors which have grown at unprecedented rates over the interval. Romania's merchant fleet has grown 27 times, switching at the same time from the construction of small-tonnage vessels to huge 165 000 dwt ore carriers.

The working dialogue, conducted by the President of the Republic with workers and specialists in the area of port activities, shipbuilding and sea transport, occasioned a look into the implementation of the provisions in the plan for the current year and the entire five-year interval, in the plans for the development of shipbuilding and enhancing the capacity of ports and of the Romanian sea transport in keeping with the resolutions of the Thirteenth Congress and the National Conference of the Party.

The visit started in the area of Constanța-Sud port, built to meet the current and future needs of the national economy, of Romania's developing commercial exchanges.

The analysis made on the occasion showed that the port of Constanța, Europe's first sea port linked to the Danube and one of the largest in Europe, stands today as a telling image of the dynamic Romanian national economy. It is here in and out most of the Romanian import-export traffic, Constanța having direct links with over 1,200 ports in 150 countries in all the continents. The new port is soon to become one of the largest in the world, its piers receiving ships of most varied capacities and

purposes. The Party General Secretary was informed on the progress of the port-construction operations, most of them currently in the final stage. The fact was pointed out that the dam-projected part of the new port covers an area three times larger than that of the old port of Constanța. Special attention was paid to the operations at the ferryboat terminal.

The port of Constanța-Sud stands where the waters of the Danube-Black Sea Canal touch the sea. In the same area construction operations have ended on the first units of the free port which, already at this stage, offers important goods-handling facilities. At the same time a modern berth has been commissioned for 165,000 dwt ore carriers, whose load may be operatively transferred to barges so that it may reach its destination as soon as possible, via the Danube-Black Sea Canal. An analysis was made of aspects related to the stage currently attained in the development of the port and to enhancing labour efficiency in port of handling goods by resorting to modern methods to a greater extent.

Next, President Nicolae Ceaușescu and Elena Ceaușescu visited Mangalia, the first ferryboat built in Romania, apt to take in 108 railway cars or the equivalent of 88 road trains, 15-metre long each, on just one voyage.

Next to be visited was the shipbuilding enterprise, one of Romania's strong industrial units.

President Nicolae Ceaușescu was told how the collectively worked to fulfill the technologies and production modernization tasks under the national shipbuilding programme for these five years. One 100,000 dwt ore carrier is ready for launching, as a second one is being built. Work is in progress to assimilate a 100,000 dwt ore carrier, build three more tankers of 85,000 dwt and have the so-

(cont. on p. 3)



THE FLAGSHIP OF THE ROMANIAN FLEET

(PAGE 4)

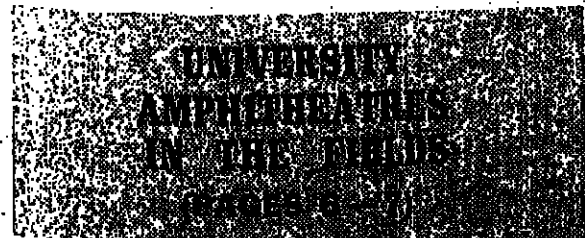
ROMANIA IN THE WORLD

(PAGE 2)

DEVELOPMENT PROGRAMMES AND THE MODERN STRUCTURES OF THE ROMANIAN INDUSTRY

INDUSTRIAL PARKS

(PAGES 8-9-10)



THE FLAGSHIP OF THE ROMANIAN FLEET

Wednesday, July 12, 1988. In the presence of Nicolae Ceaușescu and Elena Ceaușescu, the biggest ship ever built in Romania, the "Comănești" ore carrier of 165,000 dwt, was launched at the Naval Construction Enterprise in Constanța. The ship is 305 m long, 46 m wide and is as high as a 12-story house. Numerous industrial units from top branches of the Romanian economy, enterprises from Bucharest, Reșița, Galați, Hunedoara, Craiova, Slatina, etc. participated in its building.

Romania's naval industry, developed and modernized in the last two decades through the extension of productive units at the Brăila, Sulina, Turnu Severin, Galați, Oltenița, Giurgiu and Constanța shipyards as well as through building new shipyards at Tulcea and Mangalia, produce at present tens of types of river- and sea-going ships with capacities varying between 1,000 and 150,000 dwt. As a result, Romania's marine has grown 27 times since 1965 to the present.

But, let us get back to the "Comănești".

After the completion of the assembly of its "heart" — the 19,000 HP engine made at the Reșița mechanical works — the ship is to be put to basin and sea tests under conditions identical to those of actual commercial operation. A last check, the execution of the improvements required, the ship's acceptance by and delivery to the enduser, and the "Comănești" ore carrier will be entered in the international register of shipping as the Romanian vessel boasting the largest displacement.

this week's reportage

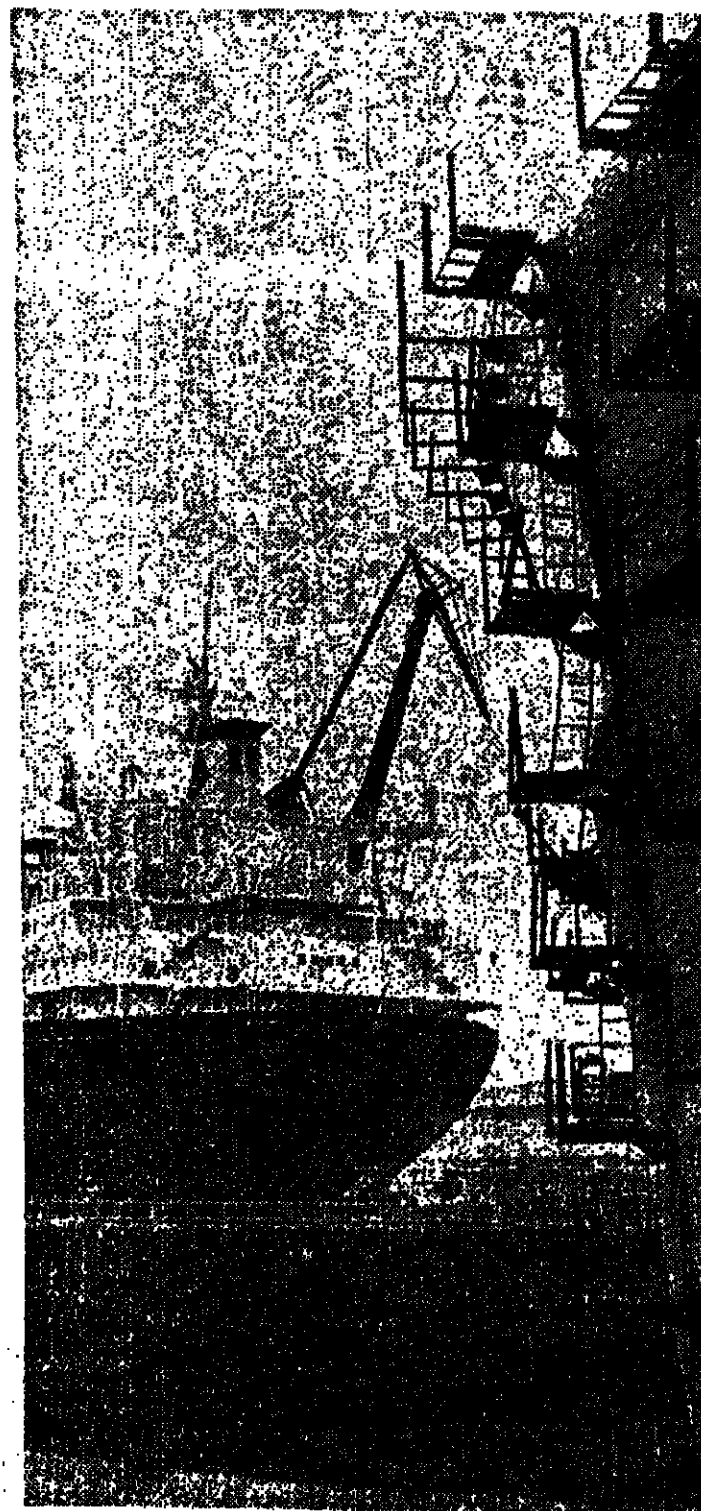
"Why did you stop at 165,000 dwt, after all?" I asked engineer Adrian Sabău, technical manager of the Constanța shipyard. "You could have built larger ships, couldn't you?"

"Certainly. The yard's technical capacity, the equipment, the size of the dry dock where the ships' sections are mounted before the launch, the 400 t cranes, and last but not least, the high professionalism attained by this collectivity of workers and specialists (300 engineers work in this shipyard at present, compared to only 30 in the beginning) make possible the building of bigger ships too. But these ships could only sail on the Black Sea, for vessels bigger than 165,000 dwt could not pass through the Bosporus towards other seas and oceans."

For the comparatively young Romanian shipbuilding industry to reach this high level, a modern shipyard was necessary having plenty of space and facilities adequate for large-scale constructions. Consequently one started building the largest dry dock in this country. The all-out work, on a stretch of land largely rescued from the sea, the continual struggle against the massive water infiltrations lasted a few years but the outcome was an immense "bed" of reinforced concrete, lying many metres under the sea, on which the slender silhouette of the first 55,000 dwt ship was already emerging.

That first "large-tonnage" ship (that was how we used to call it because it was the largest ship ever built by the Romanians and the most optimistic minds would not dare anticipate the fact that within a very short time we would make three times bigger ships) was built at the same time as the yard's sections were welded while the hydrotechnical workers were still working on the dock's foundation raft! On the day when the last mason got down from the scaffolding, the ship builders proudly wrote the name TO-MIS on the stern of the first ship in the new history of the yard, and below, the name of its home port Constanța.

There followed other vessels in the same series, and very soon afterwards one embarked on building the new, 65,000 dwt ore carrier, a natural step towards new performances. Other shipbuilding industry units have assimilated an increasingly large number of apparatuses, shipboard and mooring equipment. Man-Resița type motors of great power — up to 10,000 hp — which are assembled on ground and hoisted by means of strong 400-t cranes operating by ropes in order to be "implanted" in the ship. The recent history of Constanța shipyard has registered



The shipbuilders of the country's biggest shipyard — that of Constanța — have substantially contributed to the growth of the Romanian sea-going mercantile fleet. The photo above shows new big-tonnage ships waiting to leave on their maiden voyage on seas and oceans.

LANDMARKS OF THE ROMANIAN SHIPBUILDING INDUSTRY

The dynamics of shipbuilding in the yard of Constanța eloquently highlights its development, justifying its description as a pivot of the Romanian shipbuilding industry:

- over 1971–1975, ships adding up to 80,000 dwt were built
- over 1981–1985 — 1,475,000-dwt ships
- over 1986–1990 — 2,346,000-dwt ships.

The growth of the seagoing Romanian fleet is illustrated by the fact that while in 1968 Romania's fleet consisted of 51 ships with a displacement of 484,000 dwt, in 1988 the number of ships of various capacities and purposes reached 259, with a displacement of 4,757,000 dwt; the ships carrying Romania's pavilion now moor in most ports of the world.

another first — the 150,000 dwt oil tanker measuring 210 m in length and 30 m in height. And there is still room for other feats, because the shipyard and its people have great capacities, being prepared to answer immediate or long-term needs of the national economy. Over the last years the shipyard built the great gates of the Danube-Black Sea Canal (10,000 and 20,000 t floating docks for the ship repairing yard of the port of Midia, buoys for the Gloria off-shore oil rig, 3,000-t large barges, rock excavation platforms, transoceanic, all of them bearing the Constanța Shipbuilding Enterprise trade mark whose quality is of world repute.

A handful of experts' enthusiasm for their profession; have enabled the shipyard to comply with every requirement and organize its production process so as to build any type of sea-going ship without any previous realignment. Currently the first two ferryboats are being built on the dry docks and the outfitting platform which will serve a new maritime line between Europe and Asia, between the ports of Constanța and Samsun (Turkey). The first ship of this kind, Mangalia, was launched last year, while the second, one, is in its advanced stage

of outfitting. Such a boat 184 m long and 30 m wide with two 6,000 hp engines, can sail 107 railway cars directly on rails, on a single voyage. The ship building yard also delivered the first tanker of the 35,000 dwt series and the seventh 100,000 dwt ship — Pacsa. Mentioned about this ship is the fact that the degree of integration of maintenance equipment — subassemblies has reached 90 per cent, and the operations implied by its manufacturing process — such as blast cleaning, handling, painting and transportation — parts, outfitting, moulding and manufacturing — economic and others — are highly automated. The first vessels in the Romanian shipbuilding industry have been achieved in this shipyard being used for difficult and such difficult operations as cleaning the hulls of the ships. Currently under way is the expansion of their outfitting sections.

This latest creation of the Constanța shipyard is ready to start on its maiden voyage. Let us all wish it wind.

MODERN RAILWAY CARS

This year, the Arad Car Enterprise, the biggest specialized unit in Romania, has assimilated in production eleven new car types. The most recent product, that entered series fabrication is the car for cereal transport. Benefiting by a transport capacity of 75 cum. and an

FILTERS FOR SEA WATER PURIFICATION

The teaching staff and students of the Oil and Gas Institute in Ploiești obtained in the Institute's hydraulic investigations lab, a filter purifying sea water for ore injection, with a view to maintaining layer pressure. The product, obtained now in quantities necessary to the Romanian off-shore drilling rigs in the Black Sea, replaces, with very good results, the filters imported until now.

axle load of 22.5 t, the new car type is able to reach a speed of 120 km per hour. Compared to other car types transporting cereals, the present one ensures unloading between the rails. The rate of production renewal at this enterprise is also illustrated by the fact that compared to 1988 all products, now in fabrication, are new.

The Arad factory produces at present tons of types of railway cars for goods and passenger transport and also special cars for the Bucharest underground.

SPINNING MILL

Alongside the wool spinning mills of Bucharest, Pataș-Constanța, Timișoara and Sighișoara, the woolen wool spinning mill of Fogarai continues to the growth and diversification of production in this field. The spinning mill was commissioned 10 years ago; in 1988 the mill doubled its productive capacity following the setting into operation of a new section — the rayon pulp one. Photo: The mill is currently working at its planned capacity.



CHEMISTRY LAURELS

Romanian students won prizes also at the 29th edition of the International Chemistry Olympiad.

Organized in Finland, the competition gathered 181 participants from 26 countries. At the end of the tests the international jury awarded prizes to Romanian students too; the first prize went to Ștefan Andrei Zărac, a twelfth grader with the Mircea cel Bătrân high school in Constanța; the second prize was won by Emil Trișu, a twelfth grader with the Industrial High School of Arad; the third prize was taken by Costel Alaman, a twelfth grader with the Nicolae Bălcescu high school of Brăila. The Romanian team also included Jenei Václav, a twelfth grader with the Natural Sciences High School of Galați who missed the third prize by one point and a half.

University professor Sorin Roșca, D.Eng. from the Bucharest Polytechnic Institute, who headed the delegation,

informed us that "The 1988 edition was considerably more difficult than the previous ones. In this context the results of our pupils appear all the more important. We hope that the future will confirm their high standard of training."

MODERN MINING EQUIPMENT

The Romanian mining equipment building industry has continuously grown following the commissioning of new units and technological lines in Petroșani, Baia Mare, Caracul, Negrești-Oaș, Timișoara and Băia Mare. New types of original highly productive and efficient installations such as the whole range of mining supports and mechanized complexes for layers between 1.3 and four-metre thick, advancing and gallery reshaping machines, boring and drilling installations for mines, electric-hydraulic borers for medium hardness and abrasion rocks, extraction machines, mining locomotives, conveyor belts up to 1,500 mm and conveyor chains, excavators, etc. have been assimilated.

Photo: View from the mechanical processing section of the Mining Equipment Enterprise of Războieni (Gorj county).

PRODUCTS FOR AGRICULTURE

Romania's current output of fertilizers — over three million tons (100 per cent of active substance) — which exceeds that of 1988 (1.1 million) — is realized in 11 specialized plants such as those of Craiova, Tîrgu Jiu, Buzău, Piatra Neamț, Bacău, Arad, Năvodari, Valcea, Călușărești, Turmă Măgurele, etc. Chemical fertilizers are to be found in a varied range: the same as nitrogenous fertilizers, urea, as well as liquid chemical fertilizers (applied directly to soil or introduced in irrigation waters).

AUTOMATIC QUALITY CONTROL

Recently, "Electronica" Enterprise in Bucharest introduced the computer assisted testing of the electronic control equipment for high tech machine tools. This industrial process, belonging to a production modernization and improvement programme is applied to a wide range of electronic apparatus produced here, in different constructive variants. (In photo: a section effecting the quality check of products).



AGRICULTURAL NEWS

Digitally lanata 38/78, etc. Also worked out were wool fighting system for 35 species and fertilizing technologies for 21 species. Five new medicinal and aromatic plants have been introduced in guided cropping. In parallel, technologies for harvesting wild camomile, planting lavender, processing mint stalks and artemisia leaves have been finalized.

POWER PHYTOMASS. Specialized Romanian institutes effected fundamental researches concerning the development of chemically green mass production. Experiments with distillery sugar beet, oilseed rape, autumn rape, sugar sorghum, topinambour, with va-

rious water and forest plants led to the elaboration and adoption of a programme of biochemical energy sources. It was found out that sugar sorghum for example, can ensure even on non-irrigated cultures, raw material for 4,000–5,000 l of ethanol. Experimental cultures of topinambour, a plant recently launched in the above mentioned programme proved to have great adaptability to the pedoclimatic conditions specific to the country, yielding green mass production of over 80 t per hectare. In conditions of productivity, the exotic plant species Pisalia and Eleonora, several species of trees and shrubs — poplar, willow, etc. — proved able to be chemicalized.



CHEMICAL EQUIPMENT

The development of the Romanian chemical industry and petrochemistry has helped create and modernize a strong subbranch of equipment, installations and machine tools for all sectors of chemistry: organic and inorganic chemistry, synthetic fibres and yarns, drugs and pharmaceutical substances, synthetic rubber and plastics, as well as for petrochemistry and oil processing. Standing out among specialists, plants in the chemical equipment enterprise of Rimnicu Vilcea (see photo).



UNIVERSITY AMPHITHEATRES IN THE FIELDS

The "Nicolae Bălcescu" Agronomic Institute in Bucharest, the oldest institution of higher agricultural education in Romania, this year celebrates 136 years since its founding. The name of the prestigious establishment and those of specialized higher education institutes in Cluj-Napoca, Timişoara and Iaşi are related to the shaping and affirmation, over the years, of a whole pleiad of scientists and specialists of national and international renown.

At the same time, at the Bucharest institute, as well as at the other above mentioned institutes, tens and tens of thousand highly qualified people have been trained for all sectors of the Romanian agriculture.

In this respect, the teaching staff have made an important contribution to the introduction and generalization of the latest scientific discoveries in plant growing and animal breeding. Of this have benefited both the future specialists and the state and cooperative units in the area, their application leading to the more rational use of the land, the zoning of cereal and technical crops, the melioration of nonproductive grounds, the increase of cereal and animal productions, etc.

At the "Nicolae Bălcescu" Agronomic Institute in Bucharest, at the other similar institutes, and as a matter of fact in the Romanian education system of all levels, theoretical and practical instruction are closely linked, by virtue of the principle of integrating it with research and production. In fact, theoretical instruction, scientific research and productive practice represent sine qua non conditions for a multilateral training, with wide scope, of the future agronomists, horticulturists, veterinarians, zootechnicians and in the land improvement field, and associate professor engineer Alexandru Igaş, deputy dean of the Faculty of Veterinary Medicine and Zootechny, member of the Senate of the Bucharest Agronomic Institute.

"Our institute's scientific research and production base, concentrated mainly at the experimental teaching station at Belciugatele (located at km 25

on Bucharest-Călăraşi highway) holds a distinctive and important place in the students' practical training — for work and life. There, at Belciugatele — an education, research and production unit — there is a combination between the proper education process and hands-on training. In other words, the activity in the labs of the institute moved to the station's production farms. The students, supervised by the teaching staff, led by the institute's rector and professors, deans and deputy deans of the faculties, department heads, all the teachers of the two faculties of our institute — with five specializations in agronomy, horticulture, land improvement, veterinary medicine and zootechny — learn by working and work by learning how to obtain high cereal and technical crops, meat, milk, wool, etc. — agricultural products which represent the determin-

ing factor in the education and training process of the future specialists, much needed by agriculture and zootechny, the other sectors of this basic branch of the Romanian economy."

The experimental teaching station at Belciugatele, set up 13 years ago, carries on its activity on the basis of annual production plans and programmes and is structured similarly to state agricultural units. It is organized in special production and research farms where the future engineers and other highly educated specialists are trained for agriculture, horticulture, land melioration, veterinary medicine and zootechny. By the crops it will harvest this year (higher outputs are expected in all sectors, the largest in the station's existence), the Belciugatele station will meet the demands of the new revolution seen by Romania's agriculture.



The photos: General view of the experimental teaching station of Belciugatele and aspects of the activities carried on here: checking the evolution of the soy-bean crop; fruit picking at the Băneasa farm

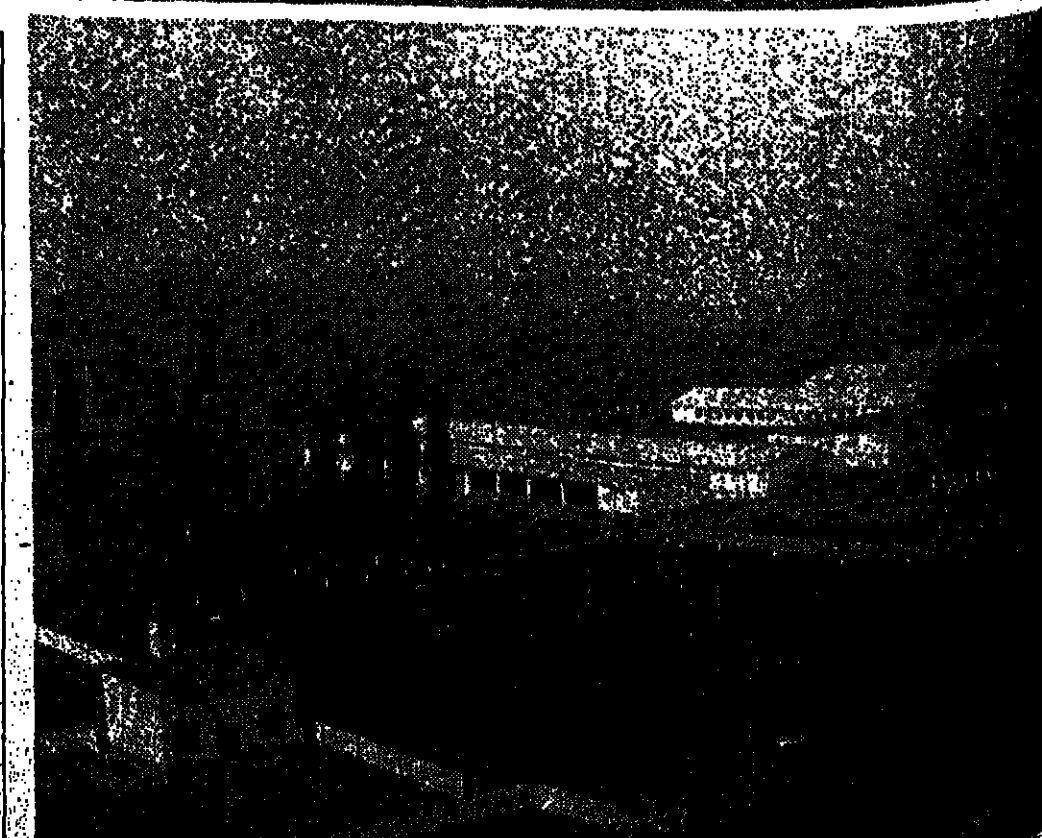


EXCELLENT FACILITIES

The experimental teaching station of the Nicolae Bălcescu Agronomic Institute in Bucharest boasts extensive facilities which rank it among the country's leading units in the field, as well as among the most modern ones worldwide, engineer Stelian Neagu, the station's technical director, pointed out. The station spreads on a surface of over 25 km. and includes three distinct zones: Belciugatele (the most important one), Moara Domnească (which specializes in researching technologies on brown-reddish soil) and Băneasa (specializing in horticulture).

All in all, the station has, among other things, some 4,000 ha of arable land cultivated with wheat, barley, oats, maize, soy-bean, sun-flower, flax, pea, bean, fodder, etc.; a strong animal farm (comprising over 600 head of cattle, 3,000 pigs, 2,500 sheep, 50,000 laying hens and poultry, 100 horses, as well as small and fur animals, etc.), a gardening farm (fruit trees,

vineyards, nurseries, a dendrology section, flowers, etc.). Moreover, the station has a modern water treatment unit feeding an experimental field on which fodder plants are grown, an industrial sector processing seeds (annually putting out over 12,000 tons of seeds of cereals and technical plants), the country's second largest unit after the Farm Research Institute of Fundulea (not too far from the station of Belciugatele), a mechanical department housing almost all modern systems of machines and instruments necessary for an intensive type of agriculture, an important sector of production chemicalization. In addition, there are excellent conditions of life and recreation for students, after classes of hands-on training. At the same time, the station implements its own special programmes for the development of pisciculture (there are two ponds covering more than 100 ha), sericulture, apiculture, etc.



EVERLASTING YOUTH

"Getting young is a utopia because nowhere in nature is there any reversibility in the regeneration of albuminoids or in the evolution of living things," wrote neurologist Gheorghe Marinescu (1857-1939) in his work *Old Age and Rejuvenation* at the turn of the century. He was among the first in the world to elaborate his own gerontological theory, a scientific pioneer work. But old age can be treated like any disease, affirmed the illustrious physician, who can be considered the founder of the Romanian school of gerontology-geriatrics, a school acknowledged at world level for its original contribution to prolonging old age.

Constantin I. Parhon (1871-1969) an undeniable master of endocrinology, the author, in 1909, of the first complete endocrinology treatise in the world, opened new paths in this domain.

His researches on the mechanism and treatment of old age, on the changes of superior nervous and endocrine activity that take place with the age, linked to the corresponding biochemical processes, have become today reference points for any scientific discussion on the matter. C. I. Parhon elaborated a general conception on the time factor in the evolution of biological phenomena and substantiated a doctrine on the endocrinology of various periods of life. He laid the bases of the clinical and experimental study of aging. He is the author of studies on the morphology and physiopathology of old age.

Concerning therapy, C. I. Parhon proposed and experimented treatments with glandular extracts and hormones which proved efficient. He created opothersapeutic drugs, being one of the pioneers of ovarian opothersapy. At the same time he called the station to the importance of social factors in the attempt to prolongate life and he actively militated for the creation of material conditions favourable to the entire society.

C. I. Parhon attracted many Romanian physicians toward gerontology. After 1932, when the National Institute of Gerontology and Geriatrics was founded in Bucharest, the latter became an authentic capital of world geriatrics.

The personality who dominated, in the last decades, this solid medical school was Ana Aslan (1897-1989) herself an example of lucid long life. Her researches included all gerontology domains with investigations extended on the mechanisms of morphological, functional and biological aging processes, as well as on its demographic and epidemiological aspects.

For the prophylaxis of aging, Ana Aslan approached a new treatment method, well known today throughout the world. This is mainly based on the effect of novocaine (N-3 procaine) in preventing and improving age-related involution disorders (arteriosclerosis, scleroderma, vitiligo, etc.). She applied this method in the clinic, in the form of original products patented as inventions: Gerovital H₂ and Asialvin (jointly with I. Polovragescu).

In the last half of the century, the average life expectancy has grown by 30 per cent, and the number of the elderly has increased considerably. Naturally, researchers all over the world are ever more carefully studying the problems of aging.

This global concern sheds light on the merits of the Romanian school of gerontology, its world homologated successes in search of the long dream of everlasting youth.

ST. SARDU ■

STUDENT RESEARCH

The experimental, didactic station of the Nicolae Bălcescu Agronomic Institute in Bucharest has an important role in updating agriculture practised in the area to which it belongs (Cluj-Napoca county and other neighbouring counties).

The farms of Belciugatele, Moara Domnească and Băneasa carry out a sustained scientific research, guided and headed by university staff, students and people working in the ve-

getal field as well as in animal farms. In agricultural units, directly contributing to the expansion and generalization of advanced technologies and experience, the station tests all strains of farming plants grown in this country, all animal breeds, all technologies. "Moara Domnească farm, for instance," said Alexandru Igaş, "has a special destination: that of researching crop technologies on brown-reddish soils, having ap-



pliability on one million ha of the country's farmland". Also here, just like in other state and cooperative farms in Cluj-Napoca and the neighbouring counties, the students conduct researches with a view to finalizing their diploma papers.

A sustained activity is going on at the experimental teaching station of Belciugatele devoted to the improvement of specialized education, its integration with research and production. The teaching staff, experts and students have undertaken to create plant strains and hybrids with superior biological characteristics, high-quality seeds and horticultural material, and to improve animal breeds.

Therefore, the station plays a major role in both training the future experts (about three fourths of the students' training time is spent in production conditions) and in enhancing the country's plant and animal production. Proving this is also the title of "Hero of the New Agrarian Revolution" awarded to the Belciugatele experimental teaching station.

T. NITESCU ■
Photos: C. MOCANU ■



LETHAL PERFUME

The happening has the smell of a detective story: the criminals have been identified but there are no proofs against them. The task of the detective is to fence the place and time of the next attack and catch the wrong doers red-handed.

A few years ago two species of insects entirely unknown to this area made their appearance all of a sudden: *Lithocolletis blancardella* and *Stigmella malloia*. They had settled in the southern part of the country, devastating orchards of apples, sweet cherry and sour cherry trees.

Those who did not know what was going on thought they were some pleasant, playful, smartly coloured butterflies. Ephemeral, adults lived as much as 7-8 days, posing no danger whatsoever. They laid apparently innocuous eggs on fruit-tree leaves. But, right after eclosion, larva entered the chlorophyll of the leaf destroying it from within. Once inside the leaves larvae made any insecticide useless. Trees looked denuded of leaves in mid-summer, and not only did they lose the fruits of that year but they also aborted a part of next year's buds.

Therefore any chance at all to eliminate the danger should have had to be focused on adults.

The time when butterfly started to fly had to be spotted with extreme minuscule. A day, maybe less. Before they could have laid their eggs.

At the request of fruit producers, the Institute of chemistry in Cluj-Napoca worked out a chemical formula of the pheromone of the insects. Namely of that substance secreted externally by females as a sexual male attractor. We shall not dwell on the fitness of the operation of identifying and chemically synthesizing such a substance.

Once prepared it could be used in so-called pheromone traps. These traps are not meant to kill butterflies themselves. They represent only a forecast and warning system. Once the first exemplars appear inside a trap the whole area is on the alert, ready to start using the best insecticide recommended by warning bulletins.

The perfume which should stimulate the perpetuation of one species or another turns out a lethal weapon.

G. OSTROVEANU ■

science
and life

DEVELOPMENT PROGRAMMES AND THE MODERN STRUCTURES OF THE ROMANIAN INDUSTRY

A WELL-GROUNDED OPTION • MAXIMUM EFFICIENCY — MINIMUM EXPENSES • RATIONAL UTILIZATION OF THE TERRAIN • AN ECOLOGICAL OUTLOOK ON INDUSTRY • CORRELATIONS WITH THE TOWN AND COUNTRY PLANNING PROGRAMME • AN OPTIMUM FRAMEWORK FOR EDUCATION AND RESEARCH

Today, almost all large or small towns in Romania have, as a gravitation centre of their economic life, an industrial park, or at least an important industrial unit, foreshadowing an industrial park in the make.

The industrial park creates the industrial profile of each locality, having the main role in its development and in the development of the area in which it is located.

Romanian economists define the industrial park as an ensemble of enterprises of the same industrial branch, of related or different branches where are achieved, through the location in the same area, the spatial integration of production, cooperation and the concentration of the units' forces, the judicious use of terrains, the common use of the utility and sociocultural establishment network, with a view to best turning to account resources.

But the definition cannot comprise all concrete situations, the whole richness of

development- OPTIONS STRATEGIES

reality. In the vast landscape of Romanian industry, from one locality to another, there is a great variety of types of industrial parks. Several tens of criteria are used to differentiate them, among which: the production integration degree, the territorial integration, a series of natural and environmental, technico-economic, organization and management, social and political factors.

FROM DEFINITION TO REALITY

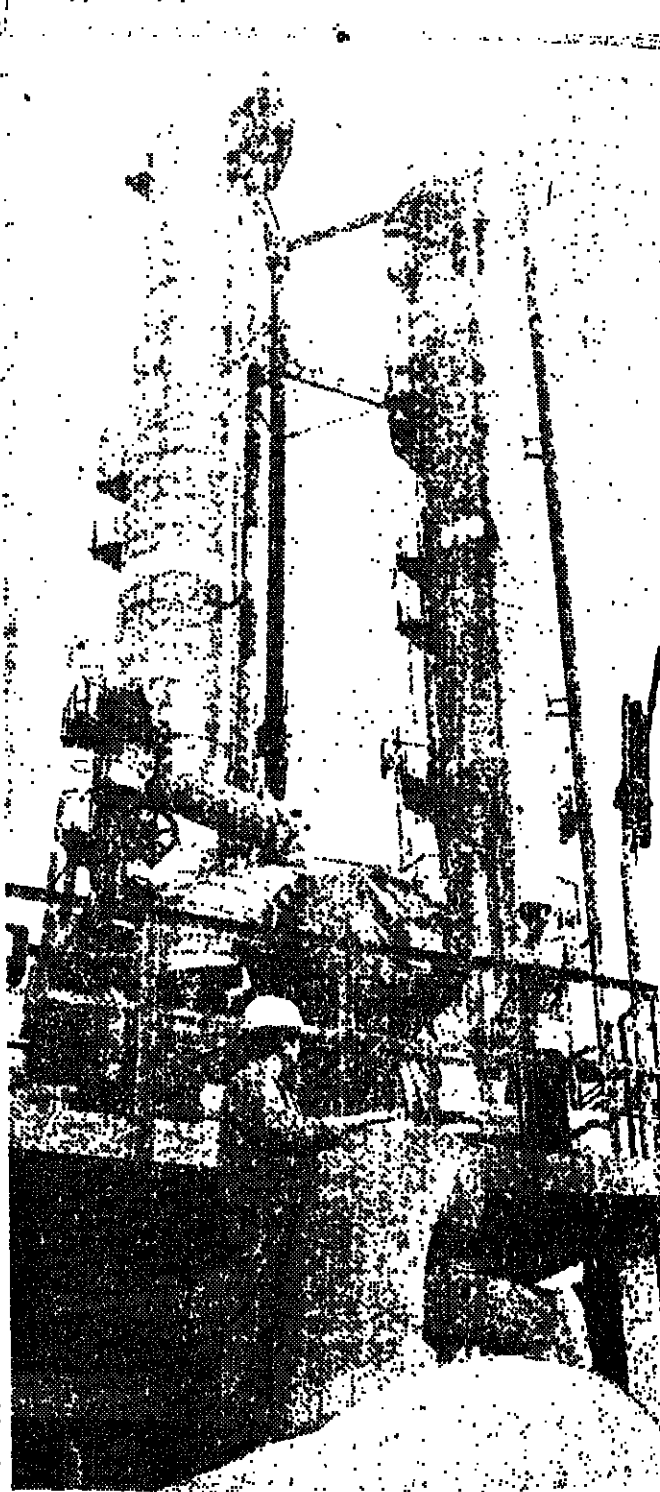
From the point of view of dimensions there are small-size parks gathering several enterprises where several thousand workers carry out their activity and big parks — where the number of personnel can reach several tens of thousands. According to the form of industrial activity there are strictly specialized parks, where all or almost all units belong to a single branch and process the same raw materials and mixed parks — grouping enterprises

from several branches. According to the number of enterprises making them up, there are parks including a single production unit — the plant, and parks including several autonomous units — up to several tens.

The industrial park is different from the industrial area which is an ensemble of economic units with a broader specific. Within an industrial area, enterprises use, in common, a series of utilities and sociocultural establishments, but own-

ing to the diversity of industrial branches cooperation is limited. There are situations when an industrial area is divided into several various industrial parks. Municipalities have, in general, several industrial parks. (In Romania the number of industrial parks is bigger than in towns: 250 to 257). As there are towns — mining or oil centres — where industrial units, although important, do not make up industrial parks. Grouping enterprises in an in-

View from the Chemical Works of Rimnicu Vilcea which through the volume and quality of its products has become a standard unit of the Romanian chemical industry. In its retorts, the rich salt deposits to be found in the area are turned into a wide range of chemical products such as caustic soda, hydrochloric acid, vinyl polychloride, etc. The works also includes a research centre of the Central Chemistry Institute. Below: Panoramic view of Ghencea industrial park, in the south-western part of Bucharest, specializing in the light industry. Grouped here are enterprises working in such fields as knitwear, upholstery fabrics, plastics, synthetic leather.

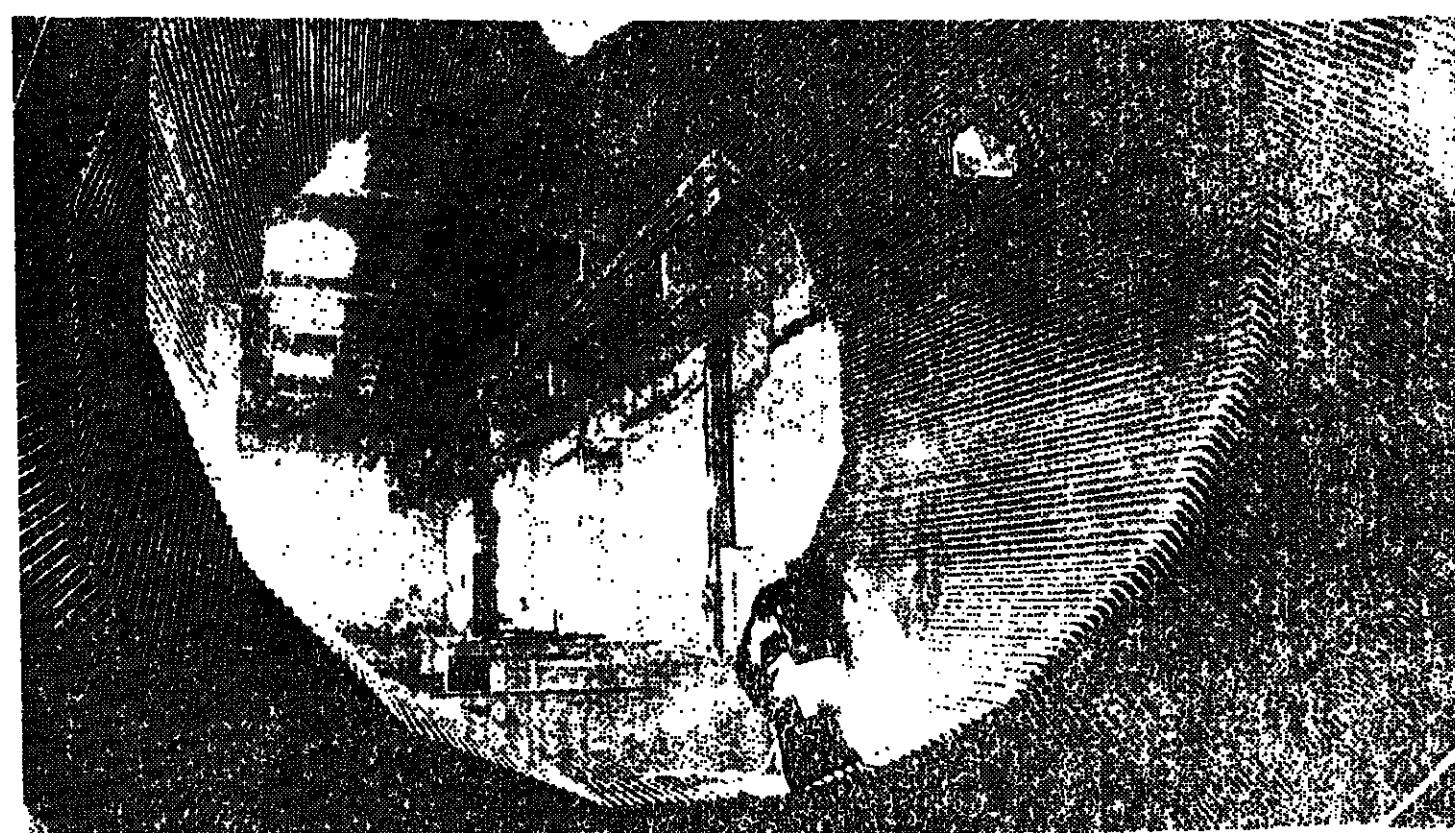


dustrial park, is, first of all, a form of spatial integration, offering the framework for cooperation among units. In this respect are built and used in common various utilities and auxiliary objectives: electric and thermal power plants, local maintenance and repair workshops, storehouses, garages, internal roads and highways, administrative buildings. When parks are homogeneous (including enterprises of the same branch or related branches) organizational integration and even a single management can be achieved.

But, regardless of its profile and dimensions, the industrial park represents an important efficiency factor related to the territorial emplacement of enterprises and the land and material wastes involved.

Appreciating these advantages, realistically evaluating its necessities and possibilities, Romanians opted for an industrialization, mainly by means of industrial parks. Thus were rapidly built, with considerable investment economies, plants, works, and factories making up Romania's modern industry of today.

The industrial park has become the fundamental element of the Romanian strategy of a rational, equilibrated repartition of production forces on the whole country territory, of harmonious development of all areas and localities.



TERRITORIAL PLANNING

The 1968 administrative and territorial reorganization created the framework for the fulfillment of large-scale socioeconomic development programmes in all counties and localities, especially in the ones lagging behind. Numerous decrees and laws regarding town and country planning adopted meanwhile have improved this framework.

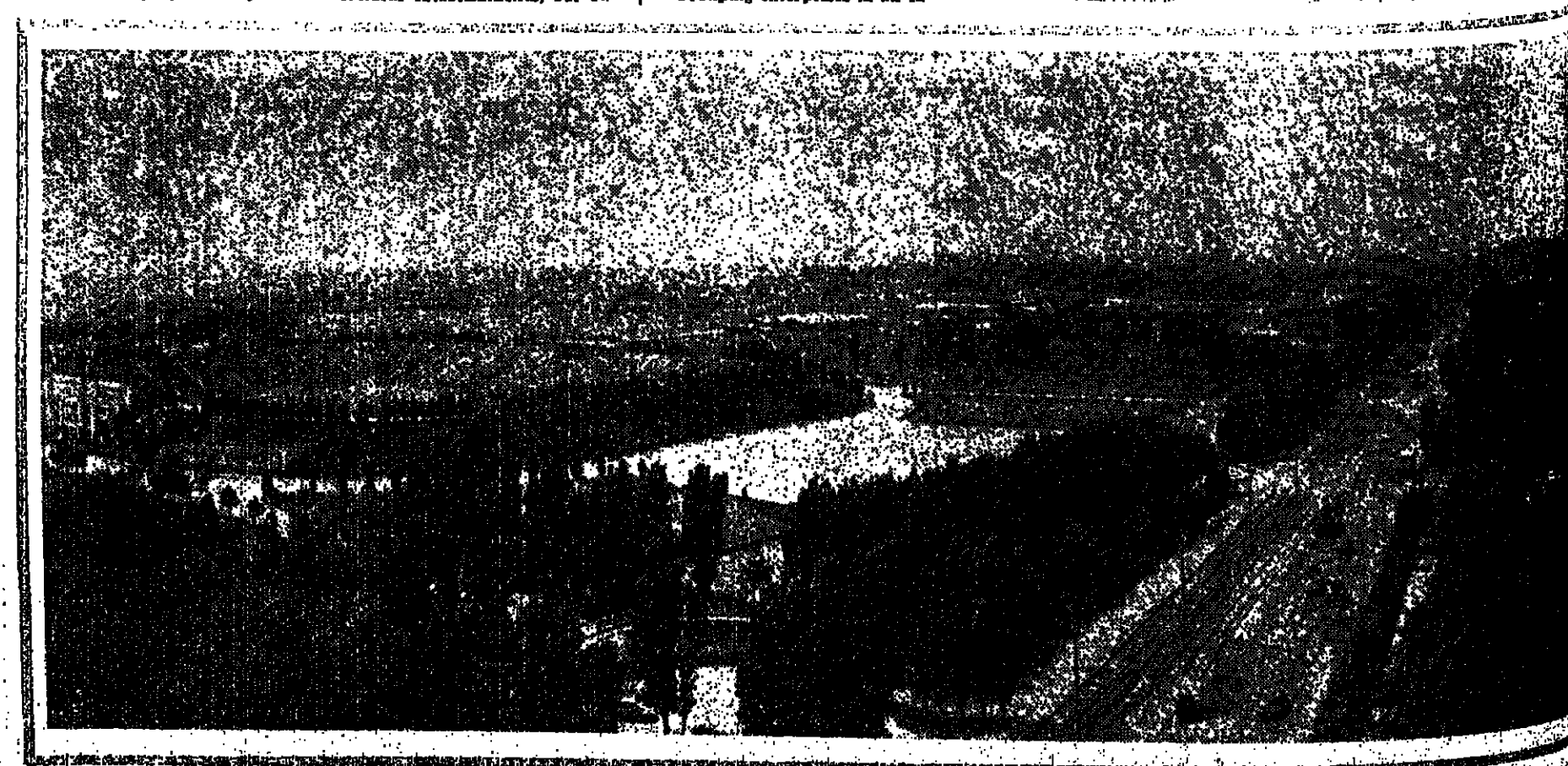
The main criteria for territorial planning also lay down the guidelines for local development: full capitalization of the resources in every area, harmonious blending of the industrial production with the farming one and the other socioeconomic activities, deepening of the links and cooperation among the localities in the same region, protection of the land, water, air, green areas, of the environment

as a whole, limiting of the built areas in towns and villages (and their rational use according to clear-cut norms) and of the green part of the land stock meant for industrial and farming activities. And they also become the criteria according to which productive investments are directed and the industrial units are placed and concentrated in the territory, within industrial areas.

Thus, through the multitude of economic, technological, constructive, social and ecological factors to be taken into account, the designing and planning of an industrial park acquires the complexity of designing a new town.

(cont. on p. 10)

Left: The Mechanical Enterprise in the north-eastern industrial area of Timisoara turning out mining equipment; the Heavy-Duty Equipment Enterprise in the eastern industrial park of Craiova. Top: An industrial giant: the Vulcan plant in Bucharest, a producer of energy equipment.



MAXIMUM EFFICIENCY

The main goal of an industrial park is to attain maximum economic efficiency as early as the construction stage.

The economic efficiency is measured in terms of the ratio between the effects obtained (by processing raw and subsidiary materials, by capitalizing and recovering all forms of energy, by having all enterprises use jointly the equipment and amenities) and by rationally using the land and the total amount of necessary expenditures. It increases in direct proportion with the ratio — which can be registered by increasing the number of effects while curtailing expenditures.

In conceiving an industrial park, a designer starts by analyzing all elements making up the raw and subsidiary materials used in the make process in order to combine technological flows and technologies, so that they may turn to best account all these components within that area.

The integral group of industrial areas in which enterprises are deployed along the logical line of production flows concerning and completing each other's production processes capitalizes wholly and much better all the values of raw materials and energy, turning them into a widely varied range of products and services. All forms of energy are used in the production process, steam and hot water delivered to neighbouring agricultural units and residential areas and damages caused to environment by pollution diminished or eliminated.

The large number of investment objectives of beneficiary units, of construction enterprises specialized in various groups of works, of designing units, the large areas of land on which buildings are to be raised, the large volume of materials and work for execution require a unitary management of construction-assembly works on the industrial park, according to the law, they depend on a single construction unit, that of the county on whose territory the erection is carried out, which has the power of a general trust and operates under the guidance of the County People's Council or of the Ministry which holds the largest share of investments.

Solutions are adopted during the designing and erection stages which cut back on the bulk of construction-assembly works and save investments substantially: the reduction of the sizes of industrial buildings, a rational siting of buildings meant to become simple and flexible constructions which can be easily adapted to the evolution of technological processes. The main way of ensuring the efficiency of industrial constructions is to prevent and typify elements, going as far as changing entire production halls. Thus buildings become lighter, manpower is reduced, material consumption is cut back and units are commissioned ahead of schedule.

The great majority of over 250 industrial parks in Romania have been erected out of typified units, reducing the cost of investments and setting up savings which allowed of the construction of several industrial units, thus stepping up the development of the national economy.

Integrating enterprises in industrial areas is also a way to save land and use it to the best account. In order to site an industrial area priority is given to soils inadequate for farm outputs. Constructive solutions are adopted which cover intensively small areas of land. Priority is given to technologies helping group and amalgamate production flows in monoblock halls and, wherever it is possible, to their vertical construction in storied buildings, thus curtailing also installation and transport networks. Certain auxiliary factories and units as well as social-administrative offices share the same building. Steam-generating stations and thermopower stations are built to the effect of supplying electricity, heat and warm water to both units of the industrial park and neighbouring residential areas. Situated are single sources of water supply and a single water treatment station for the whole area. The system of facilities including yard tracks and alleys roads is dimensioned and laid out so as to be used most efficiently by all enterprises. Social and cultural establishments are also integrated in one building in order to meet the needs of the whole area.

The designing, siting and selection of the industrial specialty and of the building site have

to integrate harmoniously and efficiently with the ecosystem (the natural and geographic network, the physical and climatic environment) and with the socioeconomic system of the respective area and localities, taking into consideration the degree of urbanization, the manpower availabilities, the neighbouring agricultural system.

Industrial areas are first of all sited near sources of raw materials (coal, oil, gas, ore, wood, etc.) in order to cut out transport to great distances, as well as near water sources with optimum discharge — the industries requiring large quantities of water which involve bulky transport (the iron and steel works of Galati and Cailor, sited on the banks of the Danube). For the high-tech industries — electronics, computer technology, automated machine tools, etc. designers choose mainly localities housing already acclaimed scientific and technical staff as well as professional experience: Bucharest, Cluj-Napoca, Timisoara and Iasi.

Enterprises which require a large number of staff are built in localities rated low as regards their gainfully employed population. Industrial units employing women (tailor and ready-made clothes factories, textile units) are built in cities where the heavy and extractive industries are dominant.

Depending on the position of the industrial area vis-a-vis the residential district at a distance, on the outskirts or inside the necessary amount of commercial facilities is also determined: restaurants, canteens, milk-cooperatives, cafeterias, ready-cooked food units, mills, bread, vegetable, fruit shops, cosmetics shops, drug-stores, newsstands, as well as service units: public transport, parking areas, post offices, laundries and chemical cleaning units, hairdressers, dispensaries, sports grounds, clubs, libraries, etc., belonging to the respective industrial area.

The siting is also related to the residential area. Noisy activities causing residue and requiring large areas are pushed to the outskirts so as to protect the city against pollution and ensure it a quiet life. In towns, near or inside a residential area only discreet and clean units can be erected which use raw materials and energy without letting out smoke or dust.

Industrial parks are sited in the extension of the residential territory but in a direction opposite to the development of the city proper (however, transport lines are prolonged), in parallel with residential districts (they do not hamper each other's development); implanted inside the residential area (the workplace is drawn nearer to dwellings, but it has to be a non-pollutant); in two peripheral zones (in towns whose topographic location does not allow of concentration in a single area); in a band, near the city, having the tendency of surrounding it (however it can block its expansion).

The best idea is to achieve a spatial integration between the industrial area and the residential district by drawing nearer the workers' dwellings to their workplace. Thus they do not have to cover long distances every day, wearing off their strength. Besides, the number of transport means can be reduced.

OPTIMUM RELATIONS

The dimensions of an industrial area are correlated to those of an residential zone. An industrial area is sited in urban perimeters which are densely populated, with an excess of manpower, in order to avoid commutation with all its consequences, meet its staff needs and cover an appropriate surface.

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Top: The new residential district Drumul Taberei also shelters the Electrotehnica enterprise manufacturing over 700 products meant for the electrical engineering and electronic industries. Centre: The Fine Mechanics Plant lying in the Obor market area of Bucharest. Bottom: The Iron-and-Steel Works of Reșița, the nucleus of a powerful industrial park specializing in mechanical engineering.

This network becomes large in case the industrial area is sited outside the city, because in the other two instances urban facilities and services are to be used.

The existence of an industrial area imposes the settlement of the question of ensuring and moulding labour force over a long haul and mostly with local efforts. As early as constructors appear on the building site of the future industrial projects, courses of qualification begin in the nearby locality. Education establishments function permanently on each industrial area. Industrial high schools and vocational schools carry out their activity in the vicinity and under the sponsorship of enterprises. For practical training they use both their own workshops as well as technical equipment and specialists from plants and factories.

In university centres, buildings of technical facilities with laboratories and workshops have also been planned near industrial areas. Thus a better integration is achieved of education with production.

Industrial areas offer an ideal framework for the symbols of research and production. The results scored in institutes of scientific research and technological engineering are not confined to the stage of tests and prototypes, they materialize rapidly into constructive solutions and production technologies. Research is present all through the process of turning out products, until the new fabricated processes reach full maturity.

The construction of units on industrial areas offer also the possibility of using jointly with enterprises pilot stations and laboratories and of making up joint collective of research and design with their specialists.

MIROSA ROȘCA

METALLIC CORD

The updating of technologies and products, the continuous diversification of the manufacturing line is a permanent concern of the Wire and Wire Products Enterprise in Buzău. Lately, a number of products required by the national economy — including new types of sined steel, metallic cord (the Buzău enterprise is the only producer in this country), sined wire, sined-calcium tubes for steel mills, new rolled goods and flat strip products — have been turned out.

ROCAR 112

One of the most recent products of the Autobuzul enterprise of Bucharest is "Rocar 112", a luxury bus boasting special comfort (air-conditioning, drinking water (aps and toilet).

The Buzău plant is the main Romanian unit specializing in urban and inter-urban mass-transport means, it turns out a wide range of buses, trolleybuses, utility vans and minibuses. Thanks to its own design, testing and homologation departments, the enterprise enriches its production line every year. For instance, buses are produced in five variants for urban and inter-urban transport (equipped with 135 up to 320 hp engines) with 10 up to 103 seats and a fuel autonomy of 1,200 km.

At the same time the unit manufactures currently two types (simple and articulated) of trolleybuses supplied with 130 or 160 kW electric engines, as well as utility vans for goods (whose capacity ranges from one to three tons), and for passengers within short distances. They are provided with diesel or gas engine (60 hp) with simple or double traction, being able to be used on any terrain.

Transport means built by Autobuzul are known and solicited by scores of countries on all continents, some of them boasting long-standing traditions in the field, such as Italy, West Germany, Great Britain, Belgium and the USSR.



HOUSING CONSTRUCTION

Housing builders in Tirgu Mures municipality (Mures county seat) have recently commissioned another 210 apartments of the number planned for this year.

In the two decades having elapsed since the new territorial-administrative division (the housing dowry of Tirgu Mures municipality has been enriched with over 40,000 apartments, there are dwellings being provided to about 120,000 persons.

Recently, the builders there started working on a new housing complex which will include more than 8,000 flats, as well as other socio-cultural facilities of major interest. Currently in an advanced stage of completion is another ensemble comprising over 3,000 flats.

Tirgu Mures county seat is today one of Romania's most attractive cities boasting a rich housing and socio-cultural dowry, and a leading higher learning centre.

In their turn, the builders of Oradea municipality (Ilihor county seat) have commissioned this year over 1,000 apartments, nearly 200 more than stipulated. Also finalized have been a number of socio-cultural projects, such as a recovery clinic in Felix, balneal resort, shops, solar energy collecting plants, etc.

Oradea town (Marșalia county) which in 1983, following the country's new administrative-territorial division, was declared a municipality, has seen a powerful socioeconomic and urban development. Through the commissioning of 10 important economic enterprises, the volume of industrial production has grown more than 10 times. Built over this period for the municipality's population were numerous socio-cultural establishments and dwellings: 1,800 new apartments, creches, kindergartens, polyclinics, etc. This year, another 150 apartments have been completed.

VARIANTS FOR MINING

Industrial firms have become an everyday event at Timisoara Mechanical Enterprise, especially after the construction of sections provided with modern processing and manufacture sections. One of these firms was the fabrication of a new, highly complex holding and transport installation — the 125 ton crane. It was completely designed by the Timisoara specialists. The crane assembly was also completed with 80 and 10 ton cranes. The same specialists introduced in fabrication new, highly complex installations: L-120 bucket wheel excavator — an equipment delivered to Herbești Mining Enterprise —, the combined machine for thermopower plant coal supply as well as a combined machine for ore extraction. In our photo: a section from the heavy mechanic section of Timisoara Mechanical Enterprise.

MACHINE TOOLS

Romania is known, at present, in the whole world as a country with a powerful and modern industry building machine tools for metal cutting and processing, complex industrial equipment and installations. The best place held by Romania in the world hierarchy of machine tool producers is telling in this respect.

The technical dowry of this sub-branch is very representative. At present, specialized enterprises like the Machine Tool and Assemblies Enterprise in Bucharest, or ARO of Tirgoviste, "Industria" of Oradea, "Strungul" Arad, a.o., are well known at a world level.

The product list of this sub-branch includes hundreds of machine tools in dozens of constructive variants, built at a competitive level, comparable to that of similar labour of various types, vertical and horizontal, flexible cells, jig boring machines and with digital display, universal milling and boring machines, universal milling machines for

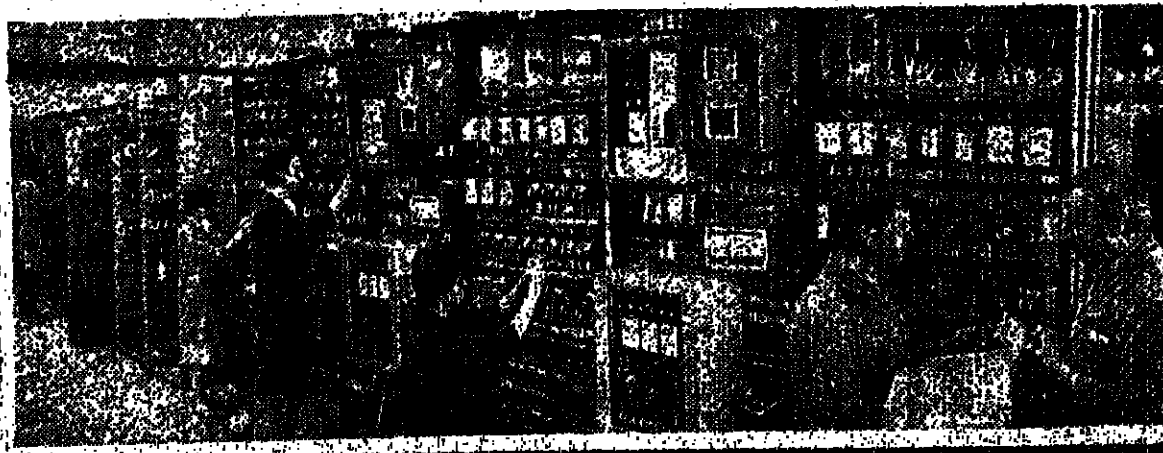
THE CHILDREN'S INTERNATIONAL CAMP

As usual in summer, the Romanian coast of the Black Sea is the welcoming host of an international camp for children who spend their holidays on the sunny beach of Eforie-Sud, one of the 15 Romanian sea resorts.

The international camp gathering children from Europe, Asia, Africa and America occupies a series of specific activities highlighting the wish of the youngest generation of everywhere to live in peace. At the same time the camp helps develop relationships of collaboration and friendship among children's organizations present in the camp.

WHEAT AND ELECTRIC PANELS

Until the '70s, Teleorman county was mainly known for its farming activity, oriented on the Romanian Plain. The principal crops were wheat and corn. Then, following the earmarking of substantial funds for the country's industrial development, modern industrial units started to be built. In a relatively short period commissioned were the enterprise of instrumentation and accessories, the enterprise of ball bearings, the factory of combined fodder, a cotton-spinning mill, the enterprise of electric control panels.



CARUL CU BERE

Mural paintings, stained-glass windows, staircases and balconies, inlaid floors, stucco work, lamp posts and... tables. Clients gathered for a chat or simply to quench their thirst are faced with pot belly beer-mugs, yet only for a short while, because soon other mugs take their place...

The same interior, the same atmosphere as one hundred years ago when the place of an old ale house owned by brothers Mircea was taken by a beautiful neo-Gothic building designed by architect Zăbriele Kofodinsky in 1888. An ambition of brothers Mircea to build an ale house such as it never existed. And they did it.

After three years of restoration things look much the same as they did in the beginning. Uncle Ghiță — the first cellarman — has preserved his joviality and lantern, still smiling to his guests even though he is no more than a wooden statue. Preserved has also been the entrance sign: a cat and a cock. Translated, the symbol means that the ale house closes when the cats go to sleep and opens when the cock sings in the morning.

As early as the beginning of the restoration works, surprises came up one by one. The stratigraphic analysis of the colour band of the 48 arms adorning the saloon of the ale house led to the conclusion that another drawing lay under two layers of colour.

Another surprise was the discovery of a niche in the wall separating the saloon from the kitchen, where brothers Mircea had built in a casket containing a horse-shoe (luck), three padlocks fastened together (the three brothers), two golden coins and some other trinkets of silver (opulence), a postcard illustrating

the interior of the ale house which proved of great help to the restorers Mihail Bocu (sculptor), Ioan Cadar (stained-glass windows), Stefan Căpăla and Sorin Iliescu (painting) and Dumitru Rădulescu (carpentry and design).

A great volume of work in which the minuteness of the craftsmen happily combined with the skill of the artist — as architect Ion Barabas, general designer of the restoration, told me — was needed for the Carul cu Bere (The Beer Cart) restaurant to regain its one-time dazzling look. As an example of accuracy we shall mention only



that the grille stone laid on the floor preserved the same dimensions as before, though industry has been long using different parameters. Moreover, in order to remake the original ventilation system, designers searched everywhere for Nicolae Păunescu, one of the masons who built it in 1921.

The only difference is that now beer is no longer brought in by a cart, as it used to (hence the name of the ale house). As for the rest, the same "period perfume", reconceived "drop by drop".

MIRCEA SONCUTEANU ■



CACTUS COLLECTION

Thanks to the passion and collecting effort of late sculptor Văda Căza, Bala Mare municipality has today one of the biggest and most important cactus collections. It numbers some 4,000 plants from 2,000 species coming from all regions of the United States, Mexico, Central and Latin America, among which there are many rare forms of cactus some of them coloured others 20-30 years old, and a "Grimm Rubra", a small cactus irradiated at Hiroshima during the nuclear bombing, grafted with a healthy plant. Part of this beautiful collection is exhibited in an original decor in the lobby of the new "Mara" hotel.

PAINTED CHRONICLE

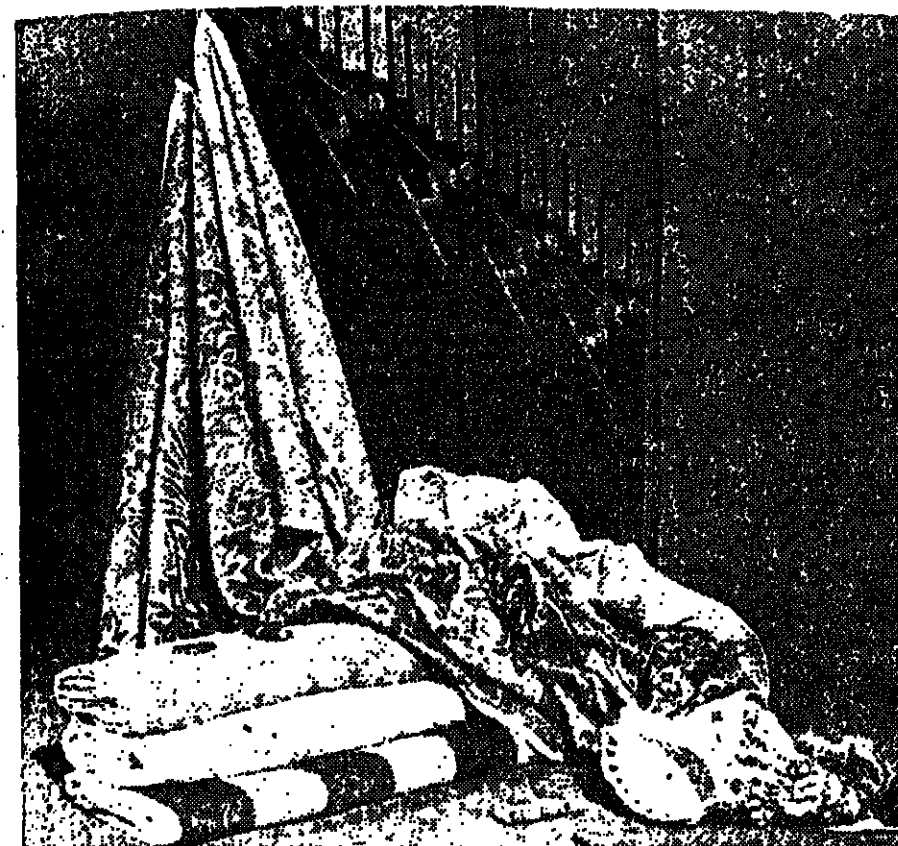
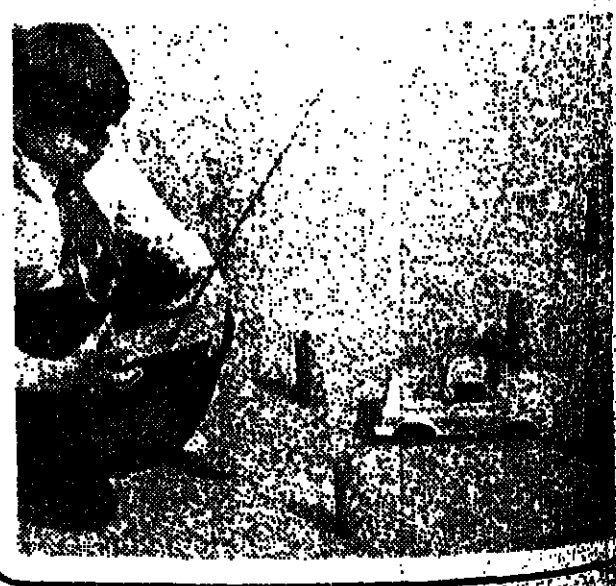
In the beautiful and monumental anthology La Chanson traditionnelle et les năvies by Roger Blanchard (Editions Max Fourny, Ari et Industrie — Paris) we shall meet Ion Niță Nicodin with the work entitled Anghelina of the Small Valley, inspired after a folk song bearing the same name. His native place: Brăsturi village of the mirific Land of Hălăuagiu (Arad county). Ion Niță Nicodin died many years ago, but his fame is carried away by both his paintings belonging to various private collections and museums in the world and... Rodica, Marrying Nicodin, the son of Ion Niță Nicodin, Rodica Mihai, became Rodica Nicodin. And once inside the house of her father-in-law she became "contaminated". In her turn she started to paint. Differently, but with the same skill. There were plenty of subjects. Because the life of villagers in a mountain settlement is very rich. And picturesque, too. A real treasure of folk traditions and customs whose charm can be enjoyed equally inaccessibly even by outsiders. For the locals, all this makes up the yearly calendar. At longer or shorter intervals, they occur regularly with the pomp of a ritual. "Realizing I could really paint myself" she added, "I decided that the subjects of my painting should remake the daily life of my native village — Brăsturi". Under Rodica Nicodin's master brush even the most prosaic events acquire the value of an effigy.

MIRCEA ICLODEAN ■



CAR MODELLING

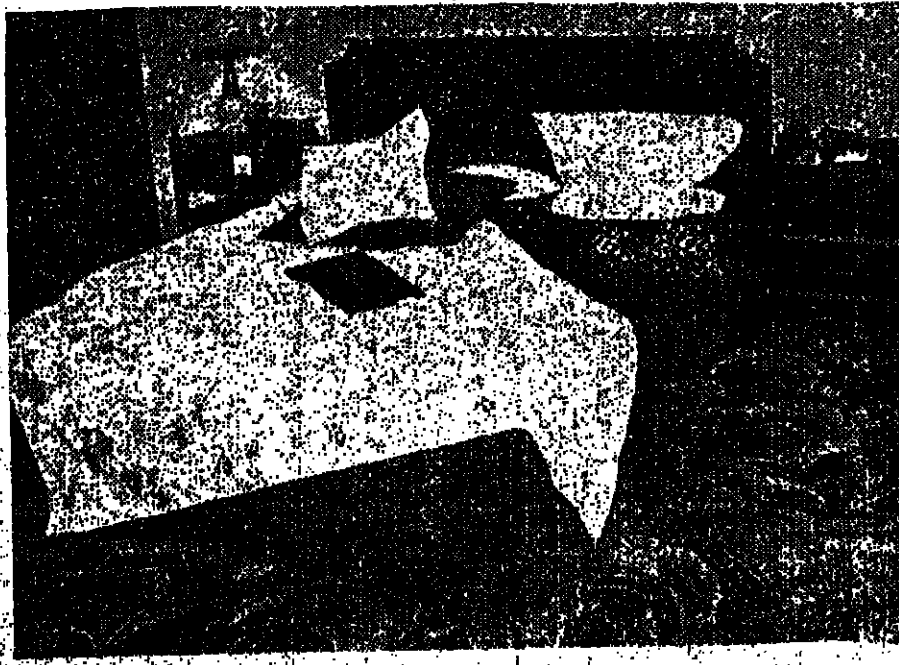
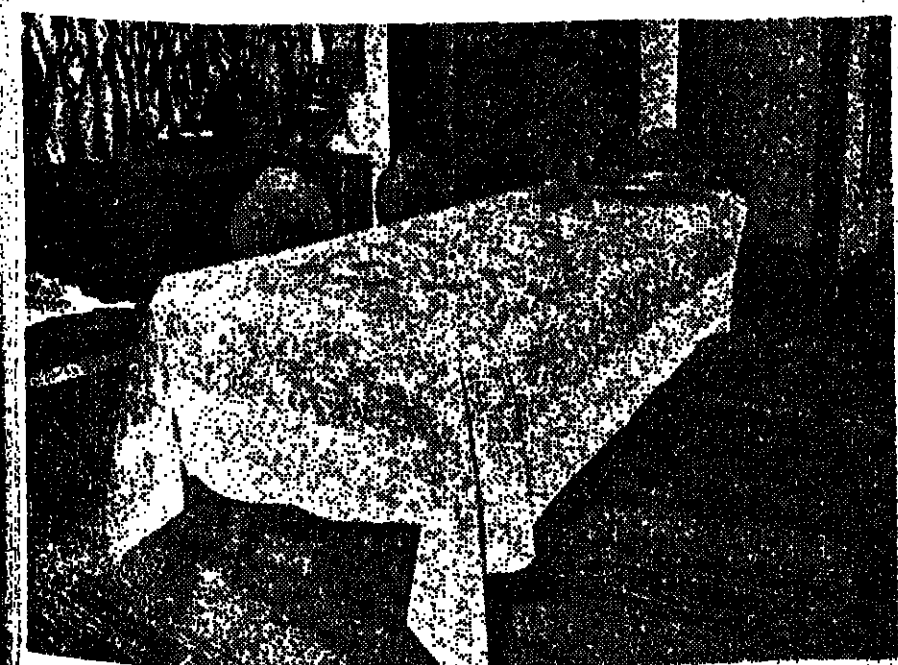
Ramona Ardelean is a seventh grader with the industrial high school no. 12 in Arad, but she has already become a celebrity. The recent intercounty contest of model-controlled car models brought her the first place in the all category. The key to success in this event which demands full attention and, naturally, great skill, is every-day practice. For since she was only a fourth grader, Ramona could be seen at the racing track of the Pioneers' and Homeland Falcons House in Arad. Thousands of races, thousands of turnings but, she and fast in making moves and finally how she has come to drive a model without fault. Hence her fame! We are sure that the upcoming nation-wide contest will confirm her shape.



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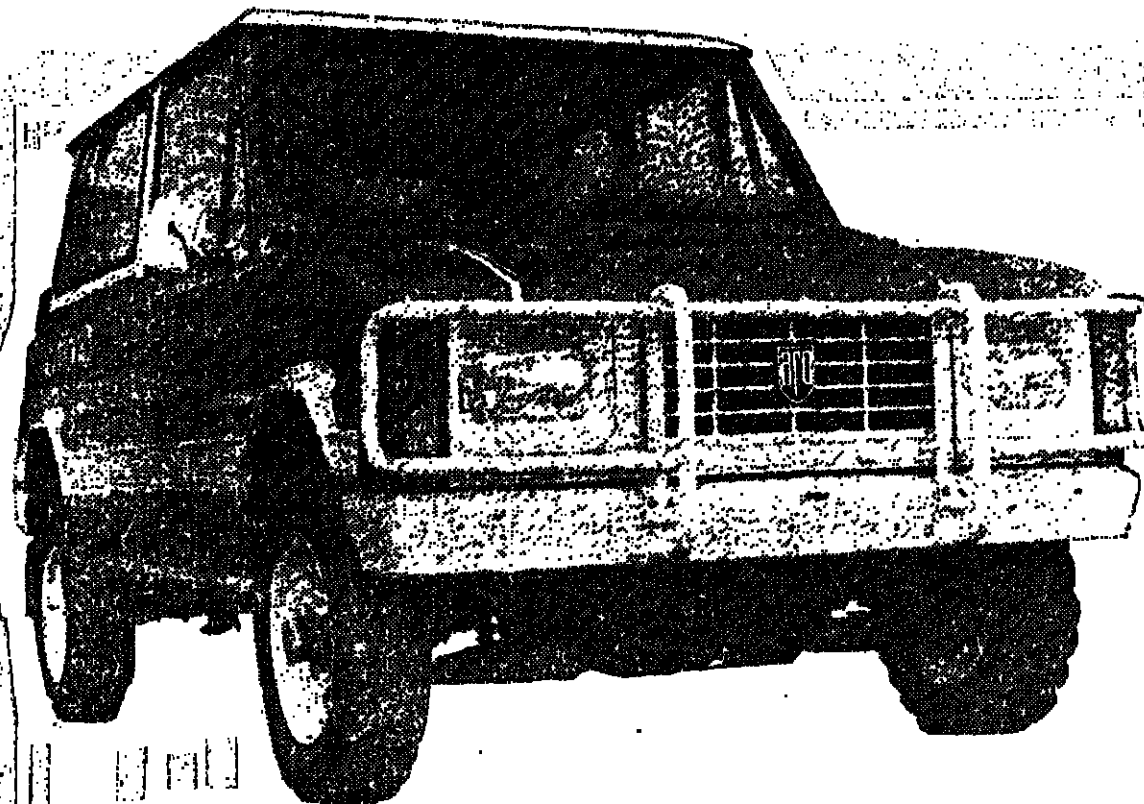
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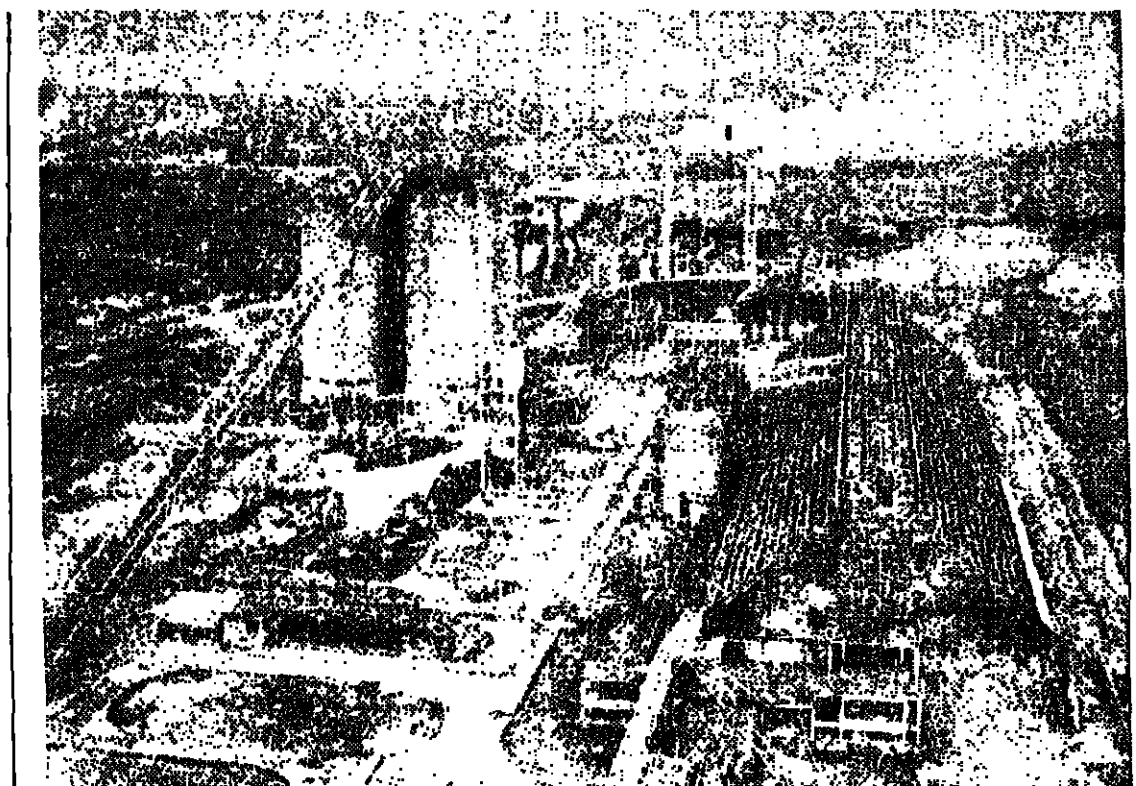
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